

REMARKS

At the outset, Applicants wish to thank the Examiner for the indication that the present application contains allowable subject matter. In the Action, claims 2-11 have been allowed, leaving only independent claim 12 and dependent claim 18 as rejected. Applicants submit the present paper because Applicants believe that the outstanding rejections of these two remaining claims may be resolved without further amendment practice.

In the Action, independent claim 12 stands rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 12 and its dependent claim 18 both stand rejected under 35 U.S.C. 103 as being obvious in view of the combination of *Park et al.* (U.S. Patent No. 5,521,115) and *Bronner et al.* (U.S. Pat. No. 5,606,188). Applicants respond to these rejections as follows:

Regarding the rejection of claim 12 under 35 U.S.C. 112, first paragraph, the Action alleges that “[t]here is no description in the Specification nor depiction in the figures of a second insulating film buried inside the semiconductor substrate and positioned over the first insulating film.” Action, p. 2. To the contrary, Applicants respectfully submit that such features may be found, among other places, in Fig. 19E elements 4 and 4a, and their accompanying description at pages 64-65 of the specification. Applicants respectfully submit that claim 12 is indeed supported by the specification, and requests reconsideration and withdrawal of this ground of rejection.

Regarding the rejection under 35 U.S.C. 103, claim 12 and its dependent claim 18 both stand rejected under 35 U.S.C. §103 as being obvious over the combination of *Park et al.* (U.S. Patent No. 5,521,115) and *Bronner et al.* (U.S. Pat. No. 5,606,188).

Independent claim 12 recites, among other features, a semiconductor substrate; an element isolation insulating film including a first insulating film buried to define active element areas inside said semiconductor substrate, and a second insulating film shallower and wider than said first insulating film, said second insulating film buried inside said semiconductor substrate and positioned over the first insulating film; and elements formed in said active element areas defined by said element isolation insulating film, said elements including a capacitor node formed in a trench in said semiconductor substrate, and a contact layer contacting an upper surface of said capacitor node, wherein said contact layer is formed in a contact hole in said semiconductor substrate. One or more embodiments of the novel claim 12 invention may allow for improved semiconductor devices.

In rejecting independent claim 12, the Action repeats the application of *Park et al.* from the prior Action, but concedes that *Park et al.* “does not show the second insulating film buried inside said substrate.” Action, p. 3. To address this admitted deficiency, the Action relies on *Bronner et al.* Specifically, the Action contends that *Bronner et al.* shows a second insulating film (alleged to be SOI layer 14) formed inside a substrate and over a first insulating film, and that it would have been obvious to one of ordinary skill to modify the *Park et al.* film 80 to have the same position as that of *Bronner et al.* SOI layer 14. Action, p. 3.

The Action has relied upon *Bronner et al.* SOI layer 14 to show a claimed second insulating film. As will be discussed below, SOI layer 14 simply is not an insulating film at all – it is a conductive layer of silicon.

Bronner et al. relates generally to a so-called “body contact” connection with a silicon-on-insulator (SOI) device. *Bronner et al.*, col. 1, lines 38-40. This “body contact” is defined to be “an electrical contact from the SOI layer 14 to the P+ poly(48),” and is considered an “important feature of this [*Bronner et al.*’s] invention.” *Id.*, at col. 4, lines 11-12 and 36-38; *see also Bronner et al.* Figs. 4 and 5. Since an important feature of the *Bronner et al.* invention involves an electrical contact with SOI layer 14, it is clear that SOI layer 14 must be conductive. Indeed, this is confirmed at col. 2, lines 52-54, where *Bronner et al.* defines SOI layer 14 as the silicon layer of a silicon-on-insulator wafer 10. *See also Bronner et al.*, col. 1, line 14 (SOI is abbreviation for “silicon-on-insulator”). Contrary to the Action’s allegation, *Bronner et al.* SOI layer 14 does not show a “second insulating film” as claimed, and even if one of ordinary skill were to combine the teachings of *Bronner et al.* with those of *Park et al.*, the result would not be the novel claim 12 structure.

Furthermore, there is no teaching or suggestion for the Action’s selective combination of *Bronner et al.* and *Park et al.* The *Bronner et al.* SOI layer 14 is of a completely different type (e.g. conductor vs. insulator), performs a completely different function from the *Park et al.* passivating film 80 (alleged to be the claimed second insulating film as well), and one of ordinary skill would not read the *Bronner et al.* patent and decide to modify the *Park et al.* passivating film 80 to have the same position as the *Bronner et al.* conductive silicon layer 14. Indeed, there is no teaching or suggestion that such a modification would even work in the system of *Park et al.* For example, lowering the level of *Park et al.* passivating film 80 would appear to require a lowering of other

components as well, such as *Park et al.* conductive strap 26 and interconnects 78, and there is nothing to suggest that such changes in *Park et al.* would even be possible.

The Action alleges that the proposed modification would have been obvious “to allow scalability below 2 volts.” Action, p. 3. However, this scalability is due to the *Bronner et al.* direct body contact discussed above, and would not be achieved in *Park et al.* by simply lowering passivating film 80 as alleged in the Action.

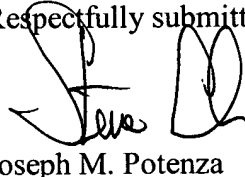
For at least the reasons stated above, Applicants respectfully submit that independent claim 12 currently distinguishes over the applied references, and is in condition for allowance. Dependent claim 18 depends from claim 12, and is further allowable for at least the same reasons as claim 12, and further in view of the various advantageous and novel features recited therein.

Conclusion

For at least the reasons set forth above, Applicants respectfully submit that pending claims 12 and 18 are in condition for allowance with allowed claims 2-11. If the Examiner feels that further discussion and/or amendment may be helpful, the Examiner is

invited to telephone Applicants' undersigned representative at the number appearing below.

Respectfully submitted,



42,402

Joseph M. Potenza
Registration No. 28,175

BANNER & WITCOFF, LTD.
1001 G Street, N.W.
Washington, DC 20001-4597
(202) 824-3000

Date: August 29, 2003